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THREE DAYS WITH MT. KING.

BY PROFESSOR BOLTON COIT BROWN.

On the 24th of June, Mr. A. B. Clark and I left Palo Alto for the High Sierra, about the head-waters of King's River. The 25th we spent in fitting out at Fresno, and early on the morning of the 26th walked out of town, with six weeks' provisions, two saddle-horses, and a pack-mule. We were obliged to walk, for our animals were so small that they were well loaded even without us. That night we camped among the forks of the river a mile or two beyond Centreville. Next morning we crossed the bridge over the '76 Canal — where the ford used to be, — and the sunrise found us passing between two small but fine mountains that jut into the wide plain and form the true advance-posts of the Sierra. These on the map are Mt. Tcho-etum-ne and Mt. Campbell. In a day and a half we reached the Sequoia Mills, and from thence, over an easy trail, in three days reached the lower end of King's River Cañon.

After a day here, we moved up nine miles to the head of the cañon, and established there a sort of headquarters from which to make excursions into the surrounding country. Here we remained for some days, enjoying the scenery, catching trout in the river — the most beautiful of rivers, — lying under the trees along its banks, taking little walks, making sketches, and chasing after runaway animals, — varying these Arcadian pursuits by stiffer jaunts

up the wild walls that shut us in, one day even going up and making sketches from the top of Avalanche Peak.

Having never been in that region before, I fell to studying the map, and that with such diligence as presently to develop in me a strong desire to see what was up Paradise River. When this became irresistible, I early one morning buckled on my knapsack, and telling Clark I should not be gone over three days, started for the gap in the cañon walls where the river comes through. I took the regular trail to the ford where you cross to go up Bubb's Creek; but not crossing it, turned to the left, and kept on along the bank, through bushes and rocks, and presently came upon traces of a disused trail. Followed with difficulty, the old blazes led for some hundreds of yards along between the talus to the left and the tangle of vegetation on the river flat to the right, then turned to the right, across the wreck of an old sheep bridge over a dark, mud-bottomed pool, and then directly into the jungle of the river bottom. Tall cottonwoods shut out the sky, and intricate bushes shut out the cottonwoods, and I went wading through a rank growth of big-leaved plants, wet with dew, and very beautiful in the cool morning,—bracken shoulder-high, and columbine clear above it, and here and there tall tiger-lilies. At last I came out upon the river again, and was led along its edge through a small open meadow, into and through a fine park-like grove of oaks; but after this came unlimited fallen rock, in which the trail ended, and I just fought my way along as best I might.

A mile or two further on these fallen rocks make the river into an almost continuous series of roaring cascades, that continue, more or less, almost up to Paradise Valley. It is as difficult as useless to specify the finest parts. It is all splendid, and there is sufficient volume of water to give real dignity and impressiveness. Along the edge the water merely slaps and spatters, but in the middle a

thundering chaos jars the very foundations of the mountains. At one place the cañon widens a little, the trees fall back, and just at the head of this opening roars a tremendous fall, the highest on the river, wherein the water is battered so fine and shot so far that it blows away into the woods, and the whole cañon-side is a-reek with its wetness. Walking there is like walking in the rain; the fall itself is almost invisible in its own mist, and the big rocks by it loom flat and gray when the spray drifts aside.

Having added to my already dew-soaked garments sufficient of this fall spray, good not only to look at and move about in, but also to breathe your lungs full of, I climbed up along the very edge of the fall, holding myself from a slip on the polished rocks by the tips of the outreaching branches. The climbing is rough, but nowhere really difficult; and though it gives you plenty of exercise and a general sense of great accomplishment, yet, practically, there is not the least real danger.

At about ten o'clock I rose over a vast talus-pile of gigantic rocks, and before me lay Paradise Valley, a widening of the cañon that has permitted a floor of earth to form, perhaps half a mile wide by three or four long, through which the ever-beautiful river winds among its groves of pine and aspen, while the great rock walls soar to giddy depths in the blue sky, where dazzling clouds float and gleam beyond the gray peaks. It is rather less attractive when you get into it, for it is a veritable nest of the sheepman—and his sheep. Still, it is delightful, especially the upper part, where the river tumbles in big cascades, and makes rapids and deep-green swirling pools, with bits of white foam on them, and the valley floor is not earth, but glacier-carved granite.

At its head the valley divides into two gorges, the main one bearing slightly to the left, and furnishing about half of its water supply, while the other and smaller

cañon runs off to the right. Ignoring the trail that goes up the latter, and clambering instead along the rocks by the water, I began the ascent, having in mind to cross the stream, scale the right wall at a convenient place, and then work back among the heights for Mt. King and Mt. Gardner. Having absolutely no information, I had to find it all out for myself,—which I count a good part of the interest. After several vain attempts to cross the torrent, a bridge appeared in the shape of a large log, that carried me over dry-shod, indeed, but plunged me directly into a mass of tough manzanita bushes, where I was nearly torn to pieces before reaching the steep and comparatively bare rocks above.

Here appeared the first snow. Some fragmentary banks I walked on, and in the gorge below, about a quarter of a mile above where I had crossed, I could see a fine typical snow bridge. It was a simple and perfect arch, fifteen feet thick, gracefully spanning the stream for perhaps forty yards, and on both sides spreading up the slopes its great white, sweeping wings.

Away above and to the left the wall was divided by a notch, through which poured a stream from the regions above, and at this notch I aimed. But I never reached it, for in an hour the rocky face of the mountain became so smooth and steep, and the ledges to climb on so few and so narrow, that I was fairly stuck, and compelled to back down to a point whence a new start could be made up toward the right. In this direction I knew, from having seen its drainage stream from the gorge below, that there must be another notch, and beyond the notch a basin. An hour or two brought me round a spur, facing—unfortunately far below me, for I had climbed too high before discovering it—the usual rock-walled basin, a mile or two across, amongst whose few trees I must evidently pass the night, for even then the sun had set. So I hastened un-

Mr. King,
from summit of Arrow Peak.
Showing route described. Cross at first camp.
B. D. 1845



willingly—for one hates to go down when making an ascent,—and by a long diagonal across the cliff face, landed just at dusk on the quaking sods of the melancholy little stream that gurgled its tortuous way about among the blackened logs which, thanks to the sheep industry, constituted the chief timber.

A careful search presently discovered an excellent sleeping-place in the shape of a cave-like hollow under a huge boulder. This I improved by walling up its ends with stones and covering the rock floor deep with pine and willow twigs. Then, after dragging together enough wood for an all-night fire, and eating, amid a hard fight with the mosquitoes, a lunch of bread and dried peaches, I crawled into my den, like any other animal. Though without blankets, yet, by feeding the fire anew every hour, I kept off excessive cold. One of the times that I arose I waited and saw a memorable sight—the moon rise over the wild, snow-splashed crests of the High Sierra. First came the paling of the stars, then the glow behind the mountain wall, then a spark—
—one sharp fire-tip on its vast black rim,—then steadily—

“ Not slower than majesty moves for a mean and a measure
Of motion; not faster than dateless Olympian leisure
Might pace with unblown ample garments from pleasure to
pleasure,”—

the mountain sinks, and the moon climbs, its radiance touching with silver the rivulet below, chalking one side of every rock, and flooding with its weird light wide ranges of lonely mountains far away in the north and east—strange and wild, solemn and beautiful, in the utter silence of the mountain midnight.

At last stars, moon, and the night itself grew pale, and the dawn had come. A hasty toilet, some bread and peaches and a drink of water, and I set off toward a lower place in the south-eastern wall, intending, if it should prove possible, to get upon its top and follow it to the summit of

Mt. King. Ledges, covered here and there with tufts and patches of sodden grass, not long free from the snow, then masses of fallen rock, with an occasional oasis of hard-frozen snow, good to walk on for a change—these formed the way. In three or four hours I reached the highest point on the ridge. But the glow of satisfaction that should attend such arrivals, in this case received instant check, for as my head rose over the last rock—behold, another deep and wide basin, even larger than the one I had just climbed out of! It contained much snow and some partially thawed-out lakes, but not a tree, nor even a single bush, in its whole lonely expanse. In this inhospitable gulf of granite and snow I must have passed the night, had I succeeded in reaching the first-attempted notch on the day before.

Seeing no alternative, I worked off diagonally down the rocky slope, then across a wide snow-field, and so, just at the lower edge of this, reached the highest of the lakes. It was still partly choked up with snow, and the surface was yet filmed with ice from last night's freeze. Sitting at its edge to sketch, I was astonished to find mosquitoes, and in the water—frogs!

I was now at the very base of the last grand peak, that rose cold and grim and glorious from its snow-encumbered base. According to my best judgment, after a careful scrutiny, the wisest way—in fact, the only way—to attack it was to try for the edge of the ridge to the left. All the rest was sheer palisades, where even the snow could not cling, but lay in broad, sweeping buttresses along their base. So, with much panting and many a pause—for the altitude began to tell,—I ascended a long snow-field, and then, with a stiff scramble, got myself upon the edge of the desired ridge. This I followed hopefully toward the summit (making the sketch at the head of this article by the way), until it became obvious that between me and the top were precipices impossible to scale. To the right, was an absolute

chasm; the precipice from the summit down into it was as good as vertical, and somewhere from one to two thousand feet deep. To the left was a similar basin; but between it and the top came a flattish place, just steep enough to hold the snow, and, accordingly, having upon it a wide snow-field (seen at the left in the sketch). Beyond this rose a wall like the one I was on, except that it seemed to offer a chance to reach the summit by going up it. With some qualms, I started across the snow. It was very steep, and being without ice-ax wherewith to dig secure steps, or alpenstock to control myself with in case of a slide, I naturally kept a keen eye on certain sharp rocks protruding from the snow several hundred feet below, just about where I should go to, if I did slip. But by facing the mountain and going sidewise, kicking my toes as deep as possible into the soft surface of the snow, I got over without mishap, and breathed easier. Then, by good fortune, I found what seemed the only pass from the snow to the top of the cliff. Having safely ascended this, I began to clamber up the last few hundred feet. The wall was not wide,—to the right a reasonable precipice, with the snow-field below; but to the left, dropping sheer down from the edges of my shoes, an abyss of air, awful to look into, and requiring some nerve to keep steady on its very brink. This whole side of the ridge, sweeping forward and becoming the whole side of the main peak, seemed fairly *concave*, it was so steep. A stone dropped over took eight seconds to reach anything.

When the climbing becomes really delicate, a knapsack always worries me. It has a bad way—mine has—of scaring me by hitting or touching something, or making me think it is going to hit or touch something, just where a touch might put your center of gravity outside your base; and then—anyway, I feel better without one. So here I laid mine aside, for the work was now simply gymnastics.

Soon even my pocket-flask bothered so that it also had to be put aside, that I might hug closer to the rock. Finally the thing got so narrow that I dared not crawl round to the right of each rock, for fear of falling into the right abyss, nor to the left, for fear of the still more fearful left abyss; so I had either to go back or to hoist myself accurately over the top of each successive rock; for now the way had narrowed to practically one series of big, flat rocks, set on edge at right angles to the line of travel, and with space enough between them for a man. I could just reach their sharp tops when I stood between two. Here I proceeded, by hooking my fingers over the top and drawing myself up, and bending over until I balanced upon the pit of my stomach, then making a half-turn on that pivot, like a compass-needle, and slowly letting myself down the other side.

A person who does not climb often imagines that one who does is a reckless mortal, whose life luck alone preserves. In his mind's eye he sees him prancing gaily along giddy heights, with a straw in his teeth, skipping freely from cliff to cliff, with two chances to one to miss his footing and tumble over a frightful precipice at almost any time. As a matter of fact, however, it is probable that really serious climbing makes one more unceasingly and acutely careful than any occupation you can easily think of. When every foothold and handhold must be separately found and judged, while in the depths below certain and instant death awaits the first slip—no! average human nature is not careless then. I, at any rate, grow quite ecstatically careful—the intense nervous stimulus and tension, combined with the absolute steadiness and poise required, being exactly one of the chief delights of the sport. I am sure several men with pike-poles could not have got me off that ridge.

But it was all in vain. Presently loomed above me a vertical cliff fifty feet high—smooth as the side of a house.

Only wings could go up there. From that moment my case was hopeless. I could see all of two of the three sides of the mountain, and they seemed to be both alike inaccessible. My only possible chance lay in the third, and as yet unseen, side of the mighty pyramid, on one edge of which I was perched. But that could only be reached by going far back down the mountain and circling half round it—a good day's work in itself, and therefore quite out of the question with the time at my disposal. Even then it was well along in the afternoon, and I had climbed, without eating, since the early morning lunch. Food was low, and by to-morrow night I must be at the camp in King's River Cañon. The summit was only one or two hundred feet above me; so the view was nearly as good where I was. So, considering everything, I ceased further effort, and gave myself up to the wonders of the mighty panorama beneath and around me.

The whole drainage system of the South Fork spread out like a map, and all the splendid mountains away off north and east of Paradise Valley, where the map shows nothing, were beautiful exceedingly, as the shadows of vast fields of floating clouds slid over them, bringing out now this one and now that, and revealing far more fully their real forms than sunshine or shadow alone ever can. Far to the north-east I could see a fine group of shining lakes that seemed to be the head-waters of the South Fork. One seemed very large, even from my great distance. I dreamed of great expeditions throughout all that new region; and, strange to say, a few weeks later one of them actually came to pass.

With a longing look at the granite spire towering so still there in the deep blue, yet seeming almost to reel as I gazed, I put my back to it, retraced my way, secured my abandoned property, and hit off down the crest. I did not, however, retrace my morning's route; but, instead of

getting down and crossing the steep snow, which was really dangerous, I followed down the ridge for half an hour, making then a difficult descent to a lower part of the same great snow-field. It being late and the snow soft, I ran, going half-knee-deep at every jump, until my wearied legs collapsed, and I came all in a heap on my head in the snow. Recovering, I plunged on, and finished half a mile below in a slide down a long steep slope, ending just at the edge of a little glacial lake—dark, and green, and silent. These deep, solitary lakes always give me, in an especial way, a sense of undisturbedness and complete isolation—for which I love them. This one was particularly charming. The vertical rocks that walled it on its mountain side dropped sheer down and out of sight in its still depths, while beside them, and forming part of its rim, swept the tail of the vast snow-field I had slid down. Opposite the snow was a characteristic glacier-polished ridge a few feet high, in the angles of which writhed little stunted pines. A hundred yards below lay another much larger and equally lovely body of water—this, also, partly edged with snow. Climbing down and crossing the outlet, my way led over wet rocks and boggy places, and soon among small flowers and grass in patches among the rocks,—down, down, hundreds of feet, reaching at last the largest lake of all—one that might take itself quite seriously, being perhaps two miles in circumference. Following the edge of this round to its outlet, I found trees, and decided to spend the night, being very weary. But after a cup of hot chocolate and a few mouthfuls of food, I seemed quite restored; and not liking the general feel of the place, I again set out, following the stream, with much running and jumping, making better speed than at any time yet, and dropped down the steep northern face of the mountain,—rocks, ledges, bushes, trees, and green velvet bogs alternating.

Signs of sheep began to appear, and by the time I reached King's River it was evident that a camp must be near. And, sure enough, a mile below, I ran into a flock of sheep, herded by one solitary mortal. He was a typical French peasant, — blue blouse outside his trousers, big shoes, stick, and shepherd-dog. He did not know a word of English, and I was too tired to think of even one in French. His pot, a-boiling, had a savory smell, and without ado I dropped my knapsack near it, pillowed my head thereupon, and never moved for an hour, while the man folded his sheep. Then, by a certain process, I secured an informal invitation to stay to tea. Afterwards, I made a good bed of juniper twigs, and as I was lugging wood for an all-night fire, here came my shepherd with *such* a tattered and dilapidated old blanket, which he quite insisted on my taking, giving me to understand that a bundle visible down under his tree contained one for him. In the morning I observed the bundle, and thought it had not been opened, and my heart was touched. So, between the fire and the blanket, the night wore away, though I got little sleep. As I lay there alone in the cold of the early dawn, full of far-away dreams as I watched the soft dawn-gray above the solemn mountains, there came a shout from the shepherd: "Hi! hi! Coffee!" Looking round to his camp, some distance away, there he was, waving his hand at me and at the coffee-pot. He had no need to keep it up long. We sat opposite by the coffee, with one of those huge grindstone loaves of bread between us. Small ceremony we observed. He put an empty tin cup before me, which I filled, and, following his example, opened my big clasp-knife, slashed off handy-sized hunks of bread, and we ate in silent content. Then he took his stick, and went towards his sheep, crying: "Hi! hi!" while I strapped on my burden, and struck down the cañon, following the sound of the rushing water.

In less than two hours I came to the snow bridge

already mentioned. I got down under it, and wet me in its drippings. I had a mind to make a sketch there in the dim light, but an unpleasant consciousness of the weight of unsupported snow over my head sent me outside, where I did make a sort of a sketch. From underneath, the bridge was one wide, sweeping main arch, the surface being made up of small hollows — little vaults, like the roof a Gothic cathedral, — from the angles of which the water ran in streams. It was also upheld by rounded columns of snow extending down from the main roof, and resting each upon the top of a big boulder. It seemed very singular, and at first inexplicable. But I think the cause must be that along the lines of greatest thrust, which, of course, must meet resisting points, like tops of boulders, the snow is most compact, and therefore slowest to thaw; so that the warm air eats away around these compressed parts first, leaving them as supports just where support is needed. The result was a beautiful vaulted roof, supported on snow columns resting on stone bases. The stream tumbled into the snow cave in a noisy waterfall, swept along the dripping tunnel with ripple and splash, and then out into the daylight below with another crashing fall. The willows underneath were turning yellow, and the buds just beginning to swell.

Without incident, I reached and traversed Paradise Valley. At its lower end, I climbed out over piles of enormous rocks, then down the wild gorge, through lovely beds of tall grasses and perfect flowers — no sheep had been there, — through jungles of prickly oaks, over dusty slopes that filled my shoes with stones, along tunnel-like paths through the tangled undergrowth by the river — bear-paths, with some alarmingly fresh tracks, — and so on, down and down, past the roaring cataracts, near sunset; and then, by hard pushing, arrived in camp just as the cool of the evening was putting the lizards to sleep, and the twilight made me stumble on the trail.

FOREST RESERVATIONS:

WITH A REPORT ON THE SIERRA RESERVATION, CALIFORNIA.

BY PROFESSOR WILLIAM RUSSELL DUDLEY.

I purpose in the following pages to give some observations on the present condition of the southern half of the Sierra Forest Reservation, or that portion included in Tulare County, which we were fortunate enough to explore during the months of July and August, 1895. I was accompanied and very materially aided by Mr. Frank Lamb, a botanical student of the Leland Stanford Jr. University; and our chief objects were observations on the condition of the sequoia groves and the National Forest Reservation, the collecting of plants for our herbarium, and photographing.

The region visited lies on both slopes and the higher altitudes of the great Western Divide of the Sierra, between the Kern and the lower San Joaquin Valleys, a country wild in the extreme, and for most part rarely visited by the professional mountain climber. The great Western Divide originates from the western side of the main chain above Mt. Whitney, and separates the sources of the King's and the Kern Rivers. It trends westward as a great mountain mass, culminating in Mt. Silliman on the north side of the Sequoia National Park, then turning southward it rises rapidly into its grandest groups, the gray, serrated summits of the Kaweah Peaks, about 14,000 feet in elevation. Southward of the Kaweahs, and below Farewell Gap and Mineral King, the divide is continued by an irregular chain, ranging from 11,000 down to 8000 feet, sending off lateral spurs which enclose the forks of the Kaweah, Tule, and White Rivers, and Deer Creek on the west, and the various smaller

creeks which flow into the Kern on the east. The range finally breaks down near Glenville and passes into the Greenhorn Mountains east of Bakersfield, a rugged range from 4000 to 7000 feet in height, the haunt of bear and deer, forested more or less toward the summits, but densely underbrushed throughout.

We abandoned the ranches of the upper foot-hill valleys as soon as possible, and depending alone on the supplies and appliances packed on our animals, entered at once the higher parts of the range at Tobias Meadows, above Glenville, fifty miles north-east of Bakersfield.

Thereafter for nearly two months, our time was spent on the rarely trodden trails of the southern Sierra, crossing and recrossing the divide, ascending and descending the lateral valleys, wherever the dark-green domes of the sequoias appeared on our horizon, and constantly pushing northward toward the gray cones of the Kaweahs.

First we turned aside to the southernmost grove of the sequoias on Deer Creek, on the western side of the range; then crossed over to the eastern side to the grove in the cañon descending to the Kern, known as the Dry Meadow Creek. From here we traveled northward until we crossed the Needles, an east and west range of beautiful granite minarets, which suddenly terminates on the east by a precipitous descent of more than 2000 feet to the Kern. Twice we clambered down the cañon to the rugged shores of this river of green water; we camped near the Soda Springs and the sequoia groves at Lloyd's Meadows; traced our way again over the divide by the Tunston and Jordan Trails, to the Middle Fork of the Tule; passed through the splendid Tule forests of sequoia; from thence passed up the North Fork of the Tule through an Alpine grove of great wildness to the high divide between that river and the South Fork of the Kaweah, on the southern boundary of the Sequoia National Park. Descending northward

from our camp at this place, we struck the Hockett Trail, and passed again over the range eastwardly to the valley of the Little Kern; passed up the rocky gorge of this torrent to its source, and over the snows of the beautiful Farewell Gap, at an elevation of over 10,500 feet, descended to Mineral King on the upper Kaweah; and after traversing the East Fork, the Middle Fork, and the Marble Fork, climbing the intervening divides, camping in the Giant Forest, and exploring the Alpine lakelets at the head of the Marble Fork, we passed out by the North Fork of the Kaweah River system, and reached the plain at Visalia.

In this expedition we collected about eight hundred species of plants, usually in duplicate, took eighty photographs, measured many sequoias, endeavored to keep up notes on the vegetation, the trails, the general topography of the region, and to record frequent barometric observations. It will be seen that observations on the forest reservation was only one of the several objects of the expedition. But whenever we met the native rancher of the foot-hills, or the hunter and camper from the valleys, we discussed the utility and desirability of the reservations, and endeavored to get at their point of view. The interests in the national forest domain of the Sierra vary with every class of people; and the final resultant of forest legislation and management must unquestionably be reached through a fair adjustment of these various interests, controlled by the supreme interests of the State at large.

Previously to 1895 it was difficult to ascertain precisely the situation and boundaries of all of our national parks and forest reservations through any authentic map. Through the kind courtesy of the Hon. S. W. Lamoreux, U. S. Land Commissioner, we have been able to obtain the valuable U. S. Land Office map of 1895 and the annual reports of that office for the years previous. It appears that the portions of the national domain in the western mountains

of America set apart as forest reserves or for their scenic interest can be classed under two heads:

1. The National Parks, not only withdrawn from sale and entry, but under the strict patrol and efficient protection of the army of the United States.

2. The Forest Reservations, withdrawn from sale and entry, but under no more protection from fire, timber-thieves, and sheep-herders that are the non-reserved lands.

The National Parks of the Western mountains comprise altogether about 3,000,000 acres, and are as follows:

Name.	Date of Establishment.	Estimated Area, in Miles.
1. The Yellowstone National Park . . .	1872 . .	61.8 x 53.6
2. The Yosemite National Park . . .	Oct. 1, 1890	36.5 x 43.0
3. The Sequoia National Park	25.0 x 9.0
4. The General Grant National Park	2.0 x 2.0

The last two were established for the preservation of certain tracts of the "Big Trees" (*Sequoia gigantea*), and are situated in Tulare County, Cal.

There are seventeen Forest Reservations, comprising altogether about 17,000,000 acres, and are situated as shown in the table on the following page.

The actual amount embraced in these seventeen reservations is estimated at 17,564,800 acres; but there is no attempt to exclude from the estimate the tracts already in possession of private owners within the limits of the reservations; therefore, the amount entirely under the jurisdiction of the United States must fall to not far below 17,000,000 acres, or 26,500 square miles, a territory more than one-half the size of the State of New York.

All of these have been withdrawn from sale and entry by proclamations made by Presidents Harrison and Cleve-

FOREST RESERVATIONS — JANUARY, 1895.
[From the Annual Report of the General Land Office (p. 94), 1894.]

State or Ter- ritory.	Name of Reservation.	Locality.	Date Proclama- tion Creating Reservation.	Estimated Area in Acres.
Alaska.....	{ Afognak Forest and Fish Culture } Reserve	Afognak Island, the Sea Lion Rocks, etc.....	Dec. 24, 1892	1,851,520
Arizona ..	Grand Cañon Forest Reserve.....	Coconino County	Feb. 20, 1893	555,520
California ..	San Gabriel Timber Reserve	Los Angeles and San Bernardino Counties	Dec. 20, 1892	4,096,000
" ..	Sierra Forest Reserve	Mono, Mariposa, Fresno, Tulare, Inyo, and Kern Counties	Feb. 14, 1893	737,260
" ..	San Bernardino Forest Reserve	San Bernardino County	Feb. 25, 1893	49,920
" ..	Trabuco Cañon Forest Reserve	Orange County	Feb. 25, 1893	1,198,080
Colorado ..	White River Plateau Timber Reserve	Routt, Rio Blanco, Garfield, and Eagle Counties	Oct. 16, 1891	184,320
" ..	Pike's Peak Timber Reserve.....	El Paso County	{ Feb. 11, 1892 } { Mar. 15, 1894 }	179,800
" ..	Plum Creek Timber Reserve.....	Douglas County	June 23, 1892	683,520
" ..	South Platte Forest Reserve.....	Park, Jefferson, Summit, and Chaffee Counties	Dec. 9, 1892	858,240
" ..	Battlement Mesa Forest Reserve	Garfield, Mesa, Pitkin, Delta, and Gunnison Counties.....	Dec. 24, 1892	311,040
New Mexico ..	Pecos River Forest Reserve.....	Santa Fé, San Miguel, Rio Arriba, and Taos Counties	Jan. 11, 1892	142,080
Oregon	Bull Run Timber Reserve	Multnomah, Wasco, and Clackamas Counties	June 17, 1892	4,492,800
" ..	Cascade Range Forest Reserve.....	{ The Cascade Mountains, from the Columbia River to near } the California Border	Sept. 28, 1893	18,560
" ..	Ashland Forest Reserve	Jackson County	Sept. 28, 1893	967,680
Washington ..	Pacific Forest Reserve	Pierce, Kittitas, Lewis, and Yakima Counties	Feb. 20, 1893	1,239,040
Wyoming ..	{ Yellowstone National Park Timber } Reserve	South and east sides of Yellowstone Park.....	{ Mar. 30, 1891 } { Sept. 10, 1891 }	

land, in accordance with the powers conferred upon them by the Act of Congress, March 3, 1891, section 24, (26 Stat., 1095).*

The total amount of forest land still in the possession of the United States is unknown to any person at present. Assistant Land Commissioner Bowers estimates (Feb. 1895, *Century Mag.*, p. 626) this amount as between 50,000,000 and 70,000,000 acres. This is admittedly a guess, however; yet we may accept this statement as the best available.

It will be seen that the great Sierra Forest Reservation, (to a discussion of which the above tables and statements have been preliminary) is a no insignificant portion of the entire forest area of the national domain. It contains over 4,000,000 acres, is the second largest of all the reservations, and stretches along the southern Sierra for over two hundred miles, from the Yosemite National Park to Mt. Breckenridge, east of Bakersfield, having an average width of perhaps fifty miles.

The tree growth of this great mountain mass and of the foot-hills flanking it occurs in pretty well-defined belts. Passing out of the plain of the San Joaquin, one encounters in midsummer a wide stretch of rolling foot-hills, drab-colored, dead, dreary, and waterless, for the most part. As the elevation increases, the belt of the blue oak (the white oak of the southern Sierra) is reached. The trees of this species (*Q. Douglasii*) are scattered as in a park, the dark blue-green color of its leaves emphasized by the gray funeral foliage of the occasional Digger pine (*Pinus Sabiniana*) growing among the rocks. Next above this

* The timber-culture laws were repealed by Congress in an Act passed March 3, 1891. Section 24, the final clause, embodies the following provision:

"That the President of the United States may, from time to time, set apart and reserve, in any State or Territory having public land bearing forests, any part of the public lands wholly or in part covered with timber or undergrowth, whether of commercial value or not, as public reservations, and the President shall, by public proclamation, declare the establishment of such reservation and the limits thereof."

belt appear the outposts of the chaparral, and later, between two thousand and four thousand feet elevation, this becomes thicker and denser, until it is almost impassable, except on the trails and roads. It is composed chiefly of manzanita, dwarf oaks, chamise (*Adenostoma fasciculatum*), *Fremontia*, *Cercocarpus*, and several species of *Ceanothus*. Above four thousand feet begins the great coniferous belt, toward whose dark shades the mountain climber longingly aspires. The yellow pine (*Pinus ponderosa*) and black pine mingle with the black oak, and are succeeded by the sugar pine, the incense cedar, and the *Sequoia gigantea*. These merge into the firs and the tamarack pine (*Pinus Murrayana*), the latter bordering the green Alpine meadows generally above eight thousand feet, but occasionally descending much lower. The timber-line fringe, bordering the high, storm-beaten altitudes, is usually made up of the mountain white pine (*P. monticola*) and the foxtail pine.

In the pine and fir belt, the underbrush is largely wanting, except in rocky or damp places, so that beautiful stretches of open ground under the trees often appear; or perhaps long, gentle slopes, only carpeted by the squawmat (*Chamaebatia foliolosa*), a small rosewort shrub with an aromatic light-green, fernlike leaf, very restful to the eye as the afternoon sun pours in upon its lawny green, and upon the straight, red-brown columns of the scattered yellow pine. In the more rocky places are large patches of the blue brush (a species of *Ceanothus*), of the chinapin, and the shrubby wild cherry. Between these patches the ground is sometimes bare, sometimes covered with small annual plants. As you approach ten thousand feet, the underbrush has largely disappeared.

Such is the aspect of the forest growth in the great Forest Reservation along the Western Divide of the Sierra. There are other trees, such as the alders and poplars of the water-courses, the rarer *Torreya* on the western slope, and

the nut pine (*P. monophylla*) on the eastern slope toward the Kern, and the occasional appearance of that tree of strength and beauty—*Quercus chrysolepis*; but these form no characteristic belts.

Of the trees mentioned, the *Sequoia gigantea*, known locally as the "redwood," is not only the most striking member of the forest, but probably the most valuable timber-tree. The region we visited south of the King's River is the real home of the species; and, excepting a few isolated groves, all the sequoias not now privately owned are within the boundaries of the reservation, the great bulk scattered along the forks of the Kaweah and Tule, above five thousand feet. In these sequoia solitudes are specimens of all ages, from the storm-beaten Lear of the forest, centuries old, to the little saplings and seedlings of a few years. Protect these groves from the rapacity of men and the scourge of fire, and the sequoia race will probably endure as long as the present climate remains. The only lumbering among the Big Trees south of the King's River region appears to be at a small mill on Bear Creek, between the North and the Middle Fork of the Tule, near the summer shanty-town of Mountain Home. Lumbering is pursued only in a feeble way in the Southern Sierra at present, our route taking us near only two other small mills (Parson's and Grover's), above Glenville, where the timber cut up is mostly yellow pine, with a small amount of sugar pine.

In general value, the sugar pine is the rival of the "big tree," perhaps its superior in this region; but it is neither so large nor so abundant as in the Yosemite National Park and farther north. There are beautiful specimens of this species, however, on the Middle Fork of the Tule and in the Giant Forest.

The yellow pine is the most widely diffused of all the conifers in the Southern Sierra. But neither this nor the

black pine, nor either of the firs, is so large as in more northern districts; nor does the incense cedar rise to the majestic proportions of the species as seen in districts from the Yosemite northward.

The finest specimens we saw of the Sierra form of *Abies concolor*, locally known as the black fir, were in or near the Giant Forest. The finest of the red fir (*Abies magnifica*) were also here and along the Jordan Trail, above Nelson's Fork of the Middle Tule.

The condition of the woods on the reservation was often such as to occasion the greatest concern. Fires had some time in the past swept over most of it. Not an old sequoia had escaped, and most of the pines and firs bore evidence of the ravages of the flames. It was our belief, nevertheless, that for some years no extensive fires had occurred in the region traversed. From Nelson's Fork of the Tule northward, there was a great deal of sound timber among the firs; but in the region south the number of over-ripe or decaying fir-trees was enormous—dying, apparently, from old age, falling, carrying down young trees in their fall, and furnishing excellent material for a most destructive forest fire. The condition was only a little less dangerous in the Sequoia Park. One was everywhere reminded of the lamentable contrast between America and Germany. The latter has forest schools and a trained class of foresters, whose duty it is to cull out the ripe timber, remove and sell it for the Government. It is their further duty to destroy the tops and old limbs, and plant young trees in the place of those removed. In America, whose magnificent forests are nowhere exceeded in variety or beauty or value, we have no forest schools, no trained foresters, no efficient system for preventing the destruction by fire of the forest wealth to which we are the spendthrift heirs.

Along the trails of this primeval wilderness there is not a single prospector's or mountaineer's cabin. The roads

from the valleys usually extend but little beyond the oak belt, in a few cases only penetrating the coniferous forests; and above Glenville there is no road crossing the Western Divide. But along the foot-hill roads and secluded mountain valleys lives a most interesting type of Californian—the Sierra ranchman and mountaineer. Every summer certain of these men, though few in number, are drawn to the high forests, as the breath of opening spring draws the migrating bird northward. They pitch their camp for a while beside the sparkling soda springs of the high mountains, and move from one Alpine meadow to another, as the pursuit of their pleasure or the hunt moves them. These men have pretty clear notions of right, and, with the fruit-rancher of the plains, understand that the reasons impelling the Government to establish the reservation are—first, the conservation of the valley water supply in its mountain sources; and, second, the preservation of the timber for the future use of the people. Most of them look with favor on the Government's action. The fruit-rancher has thought of the building of big storage reservoirs to retain the freshet waters of the spring, for the purpose of irrigating the land at present lying waste in the fertile San Joaquin Valley; but he says there is no capital available, unless the Government is willing to furnish it. The mountaineer is less ambitious. Some think that their time-honored privilege of occasionally cutting, on the Government land, a sugar-pine for "shakes," or a cedar for posts, should be continued. Some are irritated because no more forest land adjoining their own can now be secured from the Government, on account of the reservation law, while the profane sheep-herder runs riot over public and private claims alike. Such men naturally insist that the Government shall care for its land, and not allow it to become a nuisance to the adjoining private owner. In outlining the boundaries of the reservation, it was intended, I am informed by those

who assisted in fixing its limits, to include only the mountain chain, from its untimbered peaks, down through the forest belt to, and including most of, the chaparral belt. But in many cases, following section lines, the boundaries pass across the lower cañons below three thousand, or even two thousand feet, and include agricultural land; and ranches already "proved up on" are surrounded by the reservation lands—a condition which ought to be altered, as it occasions serious complaint from the better class of citizens, and gives to the enemies of the reservation too useful an argument against the system.

The general testimony of the mountain and foot-hill people in regard to the changes which had occurred during the past ten or twenty years in the vegetation of the mountains was not uninteresting. They assert that the undergrowth in the mountain forests has greatly decreased since sheep-herding came into the mountains. At present one can ride his horse anywhere through these high mountain forests, excepting in the inaccessible rocky places; while twenty years since it would have been almost impossible to have wandered far from the trails, on account of the underbrush, undoubtedly more dense than in the Northern Sierras. The sheep live on the young twigs of these undershrubs and on the small annual plants under the trees. The herders add to this destruction, as they pass out of the forest in the autumn, by setting fire to this undergrowth, in order to insure an abundant growth of tender sprouts in the spring following. The ranchmen believe this decrease in the undergrowth decreases the stream flow in the valleys below during the summer, the water from the melting snows having little to hold it in check. They regarded the destruction of the underbrush as more detrimental to the stream-flow than the destruction of the timber.

White River, it was asserted, formerly flowed in mid-summer at least twenty-five miles below its present limits.

Indeed, it is now dried almost to its source, 8500 feet above the sea. Formerly many living springs were to be found on the ranches in the White River Valley, all of which now run dry in midsummer.

No one more cordially detests the sheep-herder, that disturber of the ancient game preserves, than the rancher. To him the herder is a foreigner, a non-citizen, a parasite, who intends eventually to move back to France, or Portugal, or Ireland, whence he came, and carry with him all his gains pilfered through sheep-raising on land not his own.

Where the sheep pass on the mountain slopes and summits, there indeed is the trail of destruction and death. Before them may be a pretty stretch tinged with hosts of red or yellow *Mimulus*. Behind them is the dust of a harrowed field. Before them may be a level meadow in the forest, such as none but an Alpine sun ever shone upon; velvet-green is the tender grass, a thousand asters of one form and color here, a thousand dodecatheons of another form and color there, tiny rills of cold spring water dancing everywhere. Behind the herd are no flowers, the green grass has been reaped, as by the Reaper Death, the water is foul and festering.

To pass from the trampled meadows of the Reservation to the protected meadows of the National Park was a lesson in patriotism. The nation that could so effectively preserve the inoffensive plants, merely through the presence of a handful of its soldiers, was indeed a nation worth living for.

The glacial lake we named in our notes the "Mountain Lake," on the high crest between the Middle Fork of the Tule and the South Fork of the Kaweah, was bordered by a meadow whose flowers were grateful all day and all summer long to the protecting arm of the cavalry they rarely saw. The lakelet was on the southern border of the

patrolled Sequoia National Park, and perilously near, if not within, the unprotected Forest Reservation. It was reached only after a long climb over the roughest trail we saw, and lay in a rocky but shallow depression at about 10,400 feet elevation. The sun shone from a cloudless, deep-blue sky; not a flaw disturbed the clear, brown waters, nor a swallow skimmed over their surface. On the shady side were thickets of low willows, and about the rocks on the shore fine clumps of the crimson Sierra "heather" (*Bryanthus*), mingled with the starry, white *Ledum*. On the sunny side, the little meadows were like a velvet lawn of short, bright-green grass. No hoof had trodden them, except perhaps the light-footed deer. Here and there upon their level green were beds of crimson *Orthocarpus*, or of the dull-red *Pedicularis*; they were flecked with the lavender Alpine aster, tiny white violets were everywhere; but otherwise the meadow was a green stretch of turf. Under the shadow of the tamarack pines about the borders were *Mertensias*, with their blue bells, stately yellow *Senecios*, the little Alpine buttercup, with a score of lesser species; but nowhere a jungle, nowhere decay. The little plants were in their springtime and youth. All nature was at peace with them, and they with one another. As the sun disappeared, a chill and the quiet of the Alpine solitudes crept over the lake and the meadow; then came the darkness, the stars, and the cold. After the night, the sun rose again, but upon a meadow white and stiff with the hoar frost. As it melted, not a blade was killed nor a flower withered, and another day as brilliant as yesterday shone upon a meadow as beautiful as when we first saw it.

There are few honest people who could look on a scene like this and not pray for the increase of the United States Army, and an extension of its administrative powers — at least, for the present — over all the national domain. It is only the sheep-herder and the lumberman governed by

cupidity, and the politician who preys on the prejudices of the ignorant, who would be likely to object.

I shall not attempt to outline any plan of action for this Club. There is already a considerable body of opinion on forest management, represented by writings and discussions in American journals, which is agreed to by most Americans at all informed on this subject. The immediate withdrawal of all public forest land from sale and entry; the appointment of a commission of experts to survey it, and decide what should be permanently reserved and what should be sold; the consignment of the forest land to the protection of the United States Army until foresters can be trained; the establishment of forest schools, and the giving of instruction in the principles of forestry at West Point,—these are the chief points practically agreed on.

In addition, it has occurred to me that the appointment of local assistant commissioners to the United States Forest Commission would be useful, whose duty should be to study the needs of the citizens living within or near the boundaries of the Forest Reservations, and outline some plan for the selection and sale of the ripe timber to settlers and others, such as should meet their needs and conform, if possible, to their desires and to their presumed rights.

Lastly, game is decreasing, and there are scores of streams in the Sierra entirely devoid of fish. The stocking of the woods and the streams throughout the reservations, and the establishment in certain sections of an open season for the sportsman, would greatly increase the popularity and usefulness of scientific forest administration.

PROCEEDINGS
OF THE
MEETING OF THE SIERRA CLUB

Held November 23, 1895.

The annual public meeting of the Sierra Club was held in the hall of the Academy of Sciences, San Francisco, on the evening of Saturday, November 23, 1895. The topic announced, "The National Parks and Forest Reservations," had brought together a large audience of members and friends of the Club. Mr. Warren Olney, Vice-President, called the meeting to order, and introduced the President of the evening in the following words:

"LADIES AND GENTLEMEN:—It is the good fortune of the Sierra Club to have enrolled in its membership some of the most distinguished men in California. I think we are peculiarly happy in that respect; and at every meeting of the Club we have selected some member who does honor to the Club and to ourselves by presiding. This evening there has been selected one of the most distinguished men of this State, and I introduce him to you as the President of the evening—Professor Joseph Le Conte."

Professor Le Conte then made the following brief address:

"This meeting, as I understand it, has been called for the purpose of considering the important question of the reservation of our timber lands, and thus preserving them; and also the subject of the care of the National and State Parks. I have been asked to preside because I am presently to call on Mr. Muir to make his report, and he can do it better, I suppose, while not presiding. And I shall

call, also, on Professor Dudley for the results of his recent study of these questions in the Forest Reservations of our Southern Sierra.

"Of these two subjects I have named, both are of immediate and pressing importance. I do not believe there is any interest connected with our country—I will not say of greater, but of more pressing, urgency than this of the preservation of our timber land. The timber of our country is disappearing at a rate which is simply unparalleled in the history of the world. Only a few years, and there will literally be none left. Now, I need not tell you of the importance of this timber, not only for the purposes for which timber is used, but on account of its important effect even upon our agriculture. For though the rainfall may not be greatly affected by the removal of the timber, surely it is admitted upon all hands that the quantity that is conserved in the soil is very largely dependent upon the timber. Now, if this timber were disappearing as the result of legitimate use for ourselves, or even for humanity, it would not be so bad. But the wasteful disappearance of the timber is simply dreadful. I can only tell you what I have seen and all of you have seen. How often do we find the great trunk of a sugar pine, six or eight feet in diameter and two hundred and fifty feet high, something which Nature has been two or three or four hundred years in constructing, destroyed in a few hours; and only one block cut off for a few shakes, and the rest left to rot on the ground! But still worse have been the horrible fires. I will give you one single example from my own experience. I was camping on the shores of Crater Lake. I started back to strike the railroad. About ten miles after leaving Crater Lake I struck into the burnt timber, and I rode for thirty miles through the densest forest I think I ever saw. Trees standing just as thick as they could stand, and every one two hundred and fifty feet, at least,

in height, and not one single one that had escaped the ravages of the fire. It was one of the saddest sights I ever saw. But I know that this is a common occurrence.

"Now, I know perfectly well in modern times there is a feeling of this sort: that society, and the state, and the government, and the nation are made for the individual. Well, if it were individual in the plural, it would not be so bad; but it is individual in the singular. In other words, the maxim is, that society and the government are made for the greatest good of the greatest number. True; but the greatest number is Number One! Now, this individualism has, as it were, run mad. I hope it has already seen its best day, and we are beginning to understand that the interest of the community is greater than that of the individual, if for no other reason than that it takes account of all other individuals as well as of Number One.

"But I will put it another way. If we compare the cultured man with the uncultured man, what is the most striking difference? That the uncultured man is trying to live for the interests of the 'now,' but the cultured man—and in proportion as he is cultured—looks to the future as well as to the present. Now, the social organism is also an individual, and one whose life is not for a day or a few years, but is perennial; and a civilized community also is cultured and civilized just in proportion as it looks to the future and to the future generations, as well as to the present.

"Now, I am perfectly satisfied that nothing can save our timber land except complete reservation by the Government. Every particle of it that is yet left should be reserved by the Government, and used in a thoroughly rational way for legitimate uses only, cultivating the trees as well as the soil, and removing only such as can be steadily replaced by fresh growth. In this way the forest will increase and last indefinitely.

"And now the question of the reservations—I mean

our National and State Parks—I will barely mention. Here our interest is immediate—not of the future generations only, but of our own. All of us who have been in the Sierra know how much our pleasure, and pleasure of the highest kind, is dependent upon these parks. But for more upon this subject, we will now listen to these gentlemen who are especially qualified to speak upon it; and first I will call upon Mr. Muir.”

Mr. Muir then addressed the Club as follows:

“SIERRA CLUB AND FRIENDS:—When I was requested by the directors to address the Club on the parks and reservations of the Sierra, with reference to their preservation and management, I think I said truly that this part of the work of the Club dependent on the action of Congress was in great part lawyer’s work, and that Mr. Olney, our Vice-President, ought to do it. You know that I have not lagged behind in the work of exploring our grand wildernesses, and in calling everybody to come and enjoy the thousand blessings they have to offer. I have faithfully inspected gorges, glaciers, and forests, climbed mountains and trees, and lived with the wild animals, and, as best I could, I have talked and written about them, never sparing myself. But this it seems was not considered enough by the directors. More still was required of me. I must make speeches and lead in society affairs. This, as it appears to me, is not reasonable. This formal, legal, unwild work is out of my line, and if any harm should come to the woods from my awkward, unskillful handling of the subject this evening, then you must lay the blame where it belongs—lay it on our Vice-President, sitting at ease there on the front seat, seemingly unconscious of wrong. I proved over and over again that this speech belonged to him, but all my good arguments were lost; he remained as obstinately unchangeable and unpersuadable as a glacier or a Scotchman.

"When I realized that I must speak here to-night, I tried to prepare a compact address an hour or less in length, but the subject in my hands proved far too big. Try as I might, I could not prevent it from radiating out in a dozen different directions, which, if faithfully pursued, would have made a speech ten or twenty hours long, a thing not to be thought of in any formal city affair. So I laid down my pen in despair, and saw that I must simply trust to memory and say what I could in the measured time allowed me.

"This last summer I wanted to go to Alaska to explore some fine busy glaciers that are working on the flanks of Mt. St. Elias and the mountains about Cook's Inlet and Prince William's Sound. But I could not get away early enough for such extended explorations as would be required there; and so I just rambled off for an easy six weeks' saunter in the Sierra above Yosemite, and about the head-waters of the Tuolumne, and down the Grand Cañon of the Tuolumne to Hetch Hetchy and the sugarpine woods of the main forest belt. On this ramble I was careful to note the results of the four years of protection the region had enjoyed as a park under the care of the Federal Government, and I found them altogether delightful and encouraging. When I had last seen the Yosemite National Park region, the face of the landscape in general was broken and wasted, like a beautiful human countenance destroyed by some dreadful disease. Now it is blooming again as one general garden, in which beauty for ashes has been granted in fine wild measure. The flowers and grasses are back again in their places as if they had never been away, and every tree in the park is waving its arms for joy. Only the few spots held as cattle ranches under private ownership continue to look frowzy and wasted; but the condition of even these has been greatly improved under protection from the sheep scourge. Lilies now swing and ring their bells around the margins of the forest

meadows and along the banks of the streams throughout the lower and middle portions of the park. The broad tangles and beds of chaparral have put forth new shoots and leaves, and are now blooming again in all their shaggy beauty and fragrance. The open spaces on the slopes are covered with beds of gilia of many species and purple spraguea, monardella, etc.; while on the steeper slopes the driest friable soil, that was most deeply raked and dibbled by the hoofs of the sheep, has been replanted, mostly by a delicate species of gymnophytum, whose winged seeds were the first to reach those desolate places. Soon, however, they will be followed by other plants to enrich the bloom; for in the work of beauty Nature never stops.

"In the highlands of the park the tough sod of the glacier meadows was never wholly destroyed, but their delicate grasses were not allowed to bloom beneath the feet of the trampling sheep, and all the bright flowers that so charmingly enameled the close, smooth sod — gentians, daisies, ivesias, orthocarpus, bryanthus, etc. — vanished as if not a root or seed had been spared. This year, I am happy to say, I found these blessed flowers blooming again in their places in all the fineness of wildness — three species of gentians, in patches acres in extent, blue as the sky, blending their celestial color with the purple panicles of the grasses, and the daisies and bossy, rosy spikes of the varied species of orthocarpus and bryanthus — nearly every trace of the sad sheep years of repression and destruction having vanished. Blessings on Uncle Sam's blue-coats! In what we may call homeopathic doses, the quiet, orderly soldiers have done this fine job, without any apparent friction or weak noise, in the still, calm way that the United States troops do their duty. Uncle Sam has only to say: 'There is your duty,' and it is done. This makes me think of what Robert Burns says about the effects of whisky. He says:

'Take a Scotchman frae his hill,
Clap in his cheek a Highland gill,
Say, such is royal George's will
And there's the foe—
He'll have no thought but how to kill
Twa at a blow.'

"So Uncle Sam's soldiers, in attending to those marauding shepherds and their flocks, tried to gather in two at a blow. A very suggestive flock, not of sheep, but of shepherds and their dogs, was seen this summer crossing the Yosemite National Park. Nine Portuguese shepherds and eighteen shepherd dogs were marched across the park from the extreme northern boundary, across the Tuolumne Cañon and the rugged topography of the Merced basin to the southern boundary at Wawona, and presented as prisoners before Captain Rodgers, who had charge of the troop guarding the park. These shepherds submitted to being driven along over hill and dale day after day as peacefully as sheep, notwithstanding they had a little previously been boasting of their fighting qualities and the surprising excellence of their guns, and with what deadly effect they would use them if interfered with in their divine right of stealing pasturage. But when they were calmly confronted with a soldier, armed with the authority of the United States and a gun of much surer fire than theirs, they always behaved well, and became suddenly unbelligerent. Occasionally a flock would be found in some remote, hidden valley of the park, attended by three or four shepherds, so that a watch could be kept on the movements of the soldiers from the heights around the camp. But, sooner or later, they would be caught and made to obey the laws;—for every year the whole park is faithfully policed.

"In my wanderings this summer I met small squads of mounted soldiers in all kinds of out-of-the-way places, fording roaring, boulder-choked streams, crossing rugged cañons, ever alert and watchful; and knowing, as we do, the

extreme roughness of the topography of the park in general, our thanks are due these quiet soldiers for unweariedly facing and overcoming every difficulty in the way of duty. And always it is refreshing to know that in our changeful Government there is one arm that is permanent and ever to be depended on.

"The Yosemite National Park was made October 1, 1890. For many years I had been crying in the wilderness, 'Save the forests!' but, so far as I know, nothing effective was done in the matter until shortly before the park was organized. In the summer of 1889, I took one of the editors of the *Century Magazine* out for a walk in Yosemite and in the woods and boulder-choked cañons around it; and when we were camped one day at the Big Tuolumne Meadows, my friend said, 'Where are all those wonderful flower gardens you write so much about?' And I had to confess—woe's me!—that uncountable sheep had eaten and trampled them out of existence. Then he said, 'Can't something be done to restore and preserve so wonderful a region as this? Surely the people of California are not going to allow these magnificent forests, on which the welfare of the whole State depends, to be destroyed?' Then a National Park was proposed, and I was requested to write some articles about the region to help call attention to it, while the *Century* was freely used for the same purpose, and every friend that could be found was called on to write or speak a good word for it. The California Academy of Sciences became interested, and began to work, and so did the State University. Even the soulless Southern Pacific R. R. Co., never counted on for anything good, helped nobly in pushing the bill for this park through Congress. Mr. Stow in particular charged our members of Congress that whatever they neglected they must see that the bill for a National Park around Yosemite Valley went through. And in a little over a year from the time of our first talk

beside that Tuolumne camp-fire the bill organizing the park passed Congress, and a troop of cavalry was guarding it.

"But no sooner were the boundaries of the park established, than interested parties began to try to break through them. Last winter a determined effort was made to have the area of the park cut down nearly one-half. But the Sierra Club and other good friends of the forests on both sides of the continent made a good defense, and to-day the the original boundaries are still unbroken.

"The battle we have fought, and are still fighting, for the forests is a part of the eternal conflict between right and wrong, and we cannot expect to see the end of it. I trust, however, that our Club will not weary in this forest well-doing. The fight for the Yosemite Park and other forest parks and reserves is by no means over; nor would the fighting cease, however much the boundaries were contracted. Every good thing, great and small, needs defense. The smallest forest reserve, and the first I ever heard of, was in the Garden of Eden; and though its boundaries were drawn by the Lord, and embraced only one tree, yet even so moderate a reserve as this was attacked. And I doubt not, if only one of our grand trees on the Sierra were reserved as an example and type of all that is most noble and glorious in mountain trees, it would not be long before you would find a lumberman and a lawyer at the foot of it, eagerly proving by every law terrestrial and celestial that that tree must come down. So we must count on watching and striving for these trees, and should always be glad to find anything so surely good and noble to strive for.

"The preservation of specimen sections of natural flora—bits of pure wildness—was a fond, favorite notion of mine long before I heard of national parks. When my father came from Scotland, he settled in a fine wild region in Wisconsin, beside a small glacier lake bordered with white pond-lilies. And on the north side of the lake, just below our

house, there was a carex meadow full of charming flowers—cypripediums, pogonias, calopogons, asters, goldenrods, etc.,—and around the margin of the meadow many nooks rich in flowering ferns and heathworts. And when I was about to wander away on my long rambles I was sorry to leave that precious meadow unprotected; therefore, I said to my brother-in-law, who then owned it, 'Sell me the forty acres of lake meadow, and keep it fenced, and never allow cattle or hogs to break into it, and I will gladly pay you whatever you say. I want to keep it untrampled for the sake of its ferns and flowers; and even if I should never see it again, the beauty of its lilies and orchids are so pressed into my mind I shall always enjoy looking back at them in imagination, even across seas and continents, and perhaps after I am dead.' But he regarded my plan as a sentimental dream wholly impracticable. The fence he said would surely be broken down sooner or later, and all the work would be in vain. Eighteen years later I found the deep-water pond-lilies in fresh bloom, but the delicate garden-sod of the meadow was broken up and trampled into black mire. On the same Wisconsin farm there was a small flowery, ferny bog that I also tried to save. It was less than half an acre in area, and I said, 'Surely you can at least keep for me this little bog.' Yes, he would try. And when I had left home, and kept writing about it, he would say in reply, 'Let your mind rest, my dear John; the mudhole is safe, and the frogs in it are singing right merrily.' But in less than twenty years the beauty of this little glacier-bog also was trampled away.

"Next, I tried to save a quarter-section of the flowery San Joaquin plain when it began to be plowed for farms; but this scheme also failed, as the fence around it could not be kept up without constant watching, night and day. For the same cause, I did not take up a timber claim in the sugar-pine woods. But now we have this magnificent park, with all the world interested in keeping it.

"When I first saw Yosemite, and read the notices posted by the State Commissioners, forbidding the cutting or marring the beauty in any way of the trees and shrubs, etc., I said, 'How fine it is that this grand valley has been made a park, for the enjoyment of all the world! Here we shall have a section of the wonderful flora of the mountains of California, with most of its wild inhabitants preserved, when all about it has been injured or destroyed.' But instead of enjoying special protection, on account of its marvelous grandeur, it has suffered special destruction, for lack of the extraordinary care that so much trampling travel in it required. Therefore, now, instead of being most precious cared for as the finest of all the park-gardens, it looks like a frowzy, neglected backwoods pasture. The best meadows are enclosed for hay-fields by unsightly fences, and all the rest of the floor of the valley is given up to the destructive pasturage of horses belonging to campers and those kept for the use of tourists. Each year the number of campers increases, and, of course, destructive trampling and hacking becomes heavier from season to season. Camping parties, on their arrival in the valley, are required to report to the Guardian, to register and have camp-grounds assigned them, and their attention is called to the rules and regulations prohibiting the cutting of trees and underbrush, etc.; but as the Guardian has no power to enforce the rules—has not a single policeman under his orders,—they are of non-effect, or nearly so. Most campers and tourists appreciate their privileges, but some, I am sorry to say, need the services of a soldier as much as the sheep-owners who break over the boundaries of the park. Not a single horse or cow should be allowed to trample the Yosemite garden. It was given to the State for a higher use than pasturage. Hay and grain in abundance may be hauled into the valley and sold to the owners of saddle-trains and campers,

at moderate prices, at stables and corrals provided by the Commission. Then, of course, every disfiguring fence would be useless, and the wild vegetation would be gradually restored.

"Since the fires that formerly swept through the valley have been prevented, the underbrush requires much expensive attention, that will call for the services of a skilled landscape artist. The wasting banks of the river also require treatment of the same kind, and so, indeed, does the whole wasted floor of the valley. As far as the hotel and saddle-train service is concerned, little fault can be found; but good management of the valley in general by a Board of Commissioners appointed by the Governor, whose terms of office depend on ever-changing politics, must, I think, be always difficult or impossible as long as the people of California remain lukewarm and apathetic in the matter. The solution of the whole question, it seems to me, is recession of the valley to the Federal Government, to form a part of the Yosemite National Park, which naturally it is. One management for both is enough; and management by the unchanging War Department must be better than State management, ever changing and wavering with the political pulse. Anyhow, people usually get what they deserve; and Californians can obtain immensely better results, even from a State Commission, if they really care enough. Golden Gate Park, under State Commissioners, is well managed. Emerson says: 'Things refuse to be mismanaged long,' and now, when Yosemite affairs seem at their worst, there are hopeful signs in sight.

"A landscape artist has lately made a complete topographical survey of the valley floor with reference to a general plan of treatment. This is a good beginning, and speaks well for the present managing board. To Commissioner Fields in particular I think the thanks of our Club are due for what he has done for the valley, and is doing.

Years ago, in discussing Yosemite affairs, he said to me that he did not think any of the Commissioners were landscape artists, and that, so far as he was concerned, he would as soon try to make his own boots as to attempt to do the landscape work required in the valley. Unfortunately, his term of office expires in a few months; but I trust that the Governor will re-appoint him.

"This year, nearly as many campers as tourists visited the valley, and their stay was much longer. It is encouraging to learn that so many of the young men and women growing up in California are going to the mountains every summer and becoming good mountaineers, and, of course, good defenders of the Sierra forests and of all the reviving beauty that belongs to them. For every one that I found mountaineering back of Yosemite in the High Sierra, ten years ago, I this year met more than a hundred. Many of these young mountaineers were girls, in parties of ten or fifteen, making bright pictures as they tramped merrily along through the forest aisles, with the sparkle and exhilaration of the mountains in their eyes—a fine, hopeful sign of the times.

"How vividly my own first camping trip in the Sierra comes to mind! When I set out on the long excursion that led to California, I wandered, afoot and alone, from Indiana to the Gulf of Mexico, with a plant-press on my back, holding an easy course southward, like the birds when they are going from winter to summer. Thus I made my way to the west coast of Florida. Thence I crossed the gulf to Cuba, and enjoyed the rich tropical flora there for a few months, intending to go from there to the north end of South America, and thence through the woods to the head-waters of the Amazon, and then float down that grand river to the ocean. But a lingering fever, caught in the Florida swamps, compelled me to seek cooler climates, and I came here. All the world was

before me, and every day was a holiday. I stopped one day in San Francisco, and then asked the nearest way out to the untrampled part of the country. 'But where do you want to go?' asked the man to whom I had applied for this important information. 'To any place that is wild,' I said. This reply startled him, and he seemed to fear I might be crazy, and that, therefore, the sooner I was got out of town the better; so he directed me to the Oakland Ferry. From East Oakland I started up the Santa Clara Valley on the first of April, after a wet winter. The warm sunny air was fairly throbbing with lark song, and the hills back of the cultivated fields were covered with bloom, making bright masses of color side by side and interblending, blue and purple and yellow, from many species of gillias, lupins, compositæ, etc., now mostly lost. Of course, with such an advertisement of plant wealth I was soon on those hills, and the glowing days went by uncounted. Inquiring the way to Yosemite, I was directed through the Pacheco Pass, and from the summit of this pass I gained my first view of the Sierra, with its belts of forests and of the great San Joaquin and Sacramento Valleys. It was on one of those perfectly pure, rich, ripe days of California sun-gold, when distant views seemed as clear as near ones, and I have always thanked the Lord that I came here before the dust and smoke of civilization had dimmed the sky, and before the wild bloom had vanished from the plain.

"Descending the pass, I waded out into the marvelous bloom of the San Joaquin when it was in its prime. It was all one sea of golden and purple bloom, so deep and dense that in walking through it you would press more than a hundred flowers at every step. In this flower-bed, five hundred miles long, during my first walk through it, I used to camp by just lying down wherever night overtook me, and the flowers closed over me as if I had sunk be-

neath the waters of a lake; the radiant heads of the compositæ touching each other, ray to ray, shone above me like the thickest star-clusters of the sky; and, in the morning, I sometimes found plants that were new to me looking me in the face, so that my botanical studies would begin before I got up. Not even in Florida or Cuba had I seen anything half so glorious. But I must make haste to the forests. Crossing the San Joaquin at Hill's Ferry, I followed the Merced into the Sierra foot-hills on my way to Yosemite, and at Coulterville was warned not to attempt to go to the Valley so early in the season, as the snow was ten feet deep on the mountains. But this news was only a joyful exhilaration, and I pushed on, my mind glowing with visions of the pine-trees I had heard of, ten feet in diameter, snow ten feet deep, and, beyond these riches, the Yosemite rocks and waterfalls. Of course, the trail was buried, but I found my way easily, holding a general easterly direction, and getting now and then from the top of some headland a glimpse of the Merced Cañon, which was my main guide.

"At Crane Flat, I reached the main forest belt, and there for the first time I saw the giants of the Sierra woods in all their glory. Sugar pines more than two hundred feet high, with their long arms outspread over the spiry silver firs and the yellow pine, libocedrus and Douglas spruce.

"I began eagerly to sketch the noblest specimens, trying to draw every leaf and branch. This was in 1868. I was perfectly free; and I soon saw that it would be long ere I could get out of those woods, and, as you know, I am not out of them yet. Then the sugar pine seemed to me the priest of the woods, ever addressing the surrounding trees,—everybody that has ears to hear,—and blessing them. Few are altogether deaf to the preaching of pine-trees. Their sermons on the mountains go to our hearts; and if people in general could be got into the woods, even

for once, to hear the trees speak for themselves, all difficulties in the way of forest preservation would vanish.

"It has been said over and over again, by those who know them best, that ours are the grandest as well as the most beautiful trees in the world. Once I was seated by a camp-fire on Mt. Shasta, in the main forest belt, with Asa Gray and Sir Joseph Hooker, who, as you know, has seen and studied all the great forests of the world, and I then asked him if he knew any coniferous forest that rivaled ours. He said 'No; in the beauty and grandeur of individual trees, and in number and variety of species, the forest of the Sierra surpasses all others.' In the forests of Switzerland which I saw a few years ago, and which are so carefully preserved and managed, it would be difficult to select a hundred of the largest trees that would equal in weight a single specimen of the largest of our sequoias, to say nothing of their kingly beauty and majesty. 'They are,' as Hooker says, 'the noblest of a noble race,' while the sugar pine is the king of pines, though no less than eighty species are known to science.

"The Sierra forests are growing just where they do the most good and where their removal would be followed by the greatest number of evils. The welfare of the people in the valleys of California and the welfare of the trees on the mountains are so closely related that the farmers might say that oranges grow on pine-trees, and wheat, and grass.

"Now, any kind of forest on the flank of the Sierra would be of inestimable value as a cover for the irrigating streams. But in our forests we have not only a perfect cover, but also the most attractive and interesting trees in every way, and of the highest value, spiritual and material, so that even the angels of heaven might well be eager to come down and camp in their leafy temples.

"But Professor Dudley has an address for this evening, and I fear I am taking his time."

PROFESSOR DUDLEY. "I should be very glad to have you continue instead."

MR. MUIR. "Mr. Camminetti said last winter that there were seventy-five actual farms included in the Yosemite National Park whose owners were all praying to have the boundaries so changed as to leave their farms out. But this is not so. On the contrary, there is little or nothing in the park that can properly be called a farm, but only garden-patches, small hay-meadows, and cattle-ranches; and all the owners, as far as I know, are rejoicing in their protection from the sheep scourge.

"The two Sequoia National Parks are also protected by a troop of cavalry; but the grand Sierra Forest Reservation, extending from the south boundary of the Yosemite Park to the Kern River, is not yet protected. Many Government notices were nailed on trees along the trails as warnings to trespassers; but as there was no one on the ground to enforce obedience to the rules, cattle and sheep-owners have paid little or no attention to them.

"Now, Mr. Runcie, who is familiar with army affairs, and last summer spent some time with the troops guarding the sequoia parks, says that the troops stationed every summer in the sequoia parks could also effectually guard the great forest reserve at the same time, if only the military authority were extended over it. This we hope will be done. But we must remember that after all trespassers are kept off the parks and reservations and running fires prevented, much more will remain to be done. The underbrush and young trees will grow up as they are growing in Yosemite, and unless they are kept under control the danger from some chance fire, from lightning, if from no other source, will become greater from year to year. The larger trees will then be in danger. Forest management must be put on a rational, permanent scientific basis, as in every other civilized country."

Professor William Russell Dudley, of Leland Stanford Jr. University, was then called upon, and spoke as follows:

"MR. PRESIDENT, AND LADIES AND GENTLEMEN OF THE CLUB:—Before beginning the few remarks I have prepared for this occasion, I want to refer to one thing that Mr. Muir spoke of just before he closed, and that is in regard to the very few soldiers that probably would be needed to protect even so large a territory as the forest reservation south of the Yosemite National Park. I was in that region this summer, as you know, and while we came across a number of large flocks of sheep, there were not so many as we had been led to expect. The ranchers and hunters said there was not one-third of the number that was in the region the summer before. Their reason was, that the presence of the soldiers in the adjoining Sequoia National Park, and their raids on certain sheep-herders found in the park,—taking the herders off to Los Angeles, I believe,—and the consequent scattering of the flocks, had alarmed the sheep-herders generally, although they knew that there was no regular police force to patrol the reservation."

Professor Dudley then read a portion of the address printed in full on pages 254-267 of this number of the *SIERRA CLUB BULLETIN*. In conclusion, he added the following remarks concerning the urgent need of a redwood reservation in our Coast Range mountains:

"I should like to call the attention of the Club to one thing further: There are still large tracts standing of the redwoods of the Coast Ranges. All that portion lying south of San Francisco is in the hands of private owners, and probably all the surveyed tracts of redwood timber in Mendocino and Humboldt Counties are similarly disposed of. There is no lumber produced in California of greater general utility. And no one doubts that the cutting of the

entire redwood forest of the coast, and the accompanying destruction of the young timber and second growth, through the present wasteful methods of lumbermen, are only questions of time. It appears to me that the establishment of several redwood parks, under the control of the United States Government, should claim the immediate attention and receive the support of the Sierra Club, before increased railroad facilities have enabled private owners to make such inroads on timber now standing as to render the parks impossible. I am unacquainted with the redwoods of the northern counties; but obviously a large park in the best portion of the unsurveyed Government lands — and I understand there is redwood forest still unsurveyed — should be established, and a strong effort should be made to secure from private owners some basin in Santa Cruz or San Mateo Counties, such as the 'Big Basin' of Wardell's Creek or the basin of Gazos Creek, to serve as a natural park, and an illustration to future generations of the grandeur of the primeval Coast Range forest."

At the conclusion of these remarks, the meeting was adjourned.

NOTES AND CORRESPONDENCE.

It has for some time been becoming more and more apparent that not all of the legitimate interests and activities of the Sierra Club can be expected to find appropriate expression and record in the shape of regular articles printed in its *BULLETIN*. For a variety of reasons, matters of real importance often fail of such formal presentation; and, unless some other means is provided, much valuable thought and achievement on the part of individuals is inevitably lost to the Club and to the world. In hopes of stopping this waste, and at the same time of establishing a more intelligent and effective co-operation throughout our membership, it was proposed last summer to establish a department of "Notes and Correspondence." The suggestion seemed to meet with so much approval that shortly thereafter a general circular was sent out inviting communications, whether in the form of information or of suggestion, upon all topics related to the general interests and activities of the Sierra Club. To this invitation there has already been a very gratifying response, although by no means so general as it is hoped there may be after the department is once fairly in operation.

To all those who have been kind enough on this occasion to communicate with the Editor his thanks are especially due. It will not be expected, of course, that every such communication can find place, or even distinct mention, in these columns. But every such communication is not only welcome, but is of real value to the Club, in making those who are in charge of its affairs acquainted with the aptitudes and abilities of its members, the lines of their various interests, and the trend of their thought.

The most memorable achievement of any of our members in the field this last summer is, no doubt, the completion by Mr. Theodore S. Solomons of his arduous quest of a route through the great wilderness between the Yosemite and the King's River Cañon. With his explorations and adventures of the two previous seasons readers of the *BULLETIN* are already somewhat familiar. Going this time by a new route directly to the terminus of his last year's journey — where the storm broke and compelled his retreat, — he and his companion, Mr. Ernest C. Bonner, made their way thence to King's River, photographing, mapping, naming peaks, exploring cañons and passes, and gathering all possible information regarding a region hitherto almost, if not quite, unknown. A Sierra Club

register-box was placed by them on the summit of Mt. Goddard, and another on the Tehipitee Dome.

The results of this exploration Mr. Solomons finds far too voluminous for any detailed publication in our *BULLETIN*. Since his return, however, he has been diligently engaged in putting them into permanent form. First of all there will be a full type-written report of some one hundred sheets, carefully embodying all the observations and information secured during his three summers' work, the whole carefully arranged for convenience of record and consultation. To accompany and illustrate this report is an album of all the photographs taken during the whole exploration, supplemented by a fine series of some thirty 5x8 photographs of the Tehipitee Valley and the upper Middle Fork of King's River, contributed by Mr. George Fiske, of Sanger. Last, but not least, is a large map, not merely embodying all obtainable topographical information concerning the region traversed, but showing the nature and reliability of every trail or route encountered, and the location and compass-direction of the camera for every photograph taken. When completed, the whole will be readily accessible to members in the rooms of the Club; for Mr. Solomons very generously proposes to present to the Sierra Club, as its fitting custodian, this memorial of his three years' quest.

Lieutenant N. F. McClure has presented to the Club a fine blue-print of his new map of the Yosemite National Park. The work is specially valuable as embodying, in addition to all previous information, the results of the Lieutenant's own explorations during the past two seasons in the wildest and most inaccessible portions of the reservation. The map may be consulted where it now hangs, in the rooms of the Sierra Club, at the Academy of Sciences. A communication from Lieutenant McClure, giving itineraries of three new routes in various portions of the Park, is reserved for publication in our next number.

During the month of June, 1895, Mr. J. N. Le Conte, with Professor C. L. Cory and Mr. H. W. Corbett, made a hasty trip through the King's River Cañon, and *via* the Kearsarge Pass and Hockett Trail, to Mt. Whitney, returning to the plains by way of Mineral King and the East Fork of the Kaweah River. The most noteworthy feature of the trip was the ascent of Mt. Brewer from the King's River Cañon. The south wall of the Cañon was climbed by the gorge just east of the Grand Sentinel. This led by a very rough route to a well-marked pass immediately to the east of Avalanche Peak. This pass is on the divide between Roaring River and the main South Fork, and has an elevation of about 10,500 feet. From this point an easy way was found south-

ward along the mountain side, till the first large stream coming in from the east was encountered. This was found to head in Mt. Brewer, and the ascent was made by following up the south branch of the stream, when it forked at the base of the mountain, to the crest of the "Western Divide." This latter was then followed northward to the summit. A monument was built, and a Sierra Club register-box was deposited there on June 10th. No records or marks of any sort were found to show that any one had made an ascent since Professor Brewer's in 1864. The route just described is, of course, impracticable for pack-animals. To make the trip as this party did would require three days. A reconnaissance into the cañon of the Roaring River showed it to be utterly impassable. The gorge is sheer wall on the one hand, and steep glaciated slope on the other, with the river filling all the space between.

Since his return Mr. Le Conte has been diligently at work completing the new map he has been compiling for the Sierra Club. It will include practically the same territory as that covered by the two sheets of the old map, and is of the same scale. Much reliable material has been added from the new sheets by the U. S. Geological Survey of the region about the Yosemite Valley. A strip from 10 to 20 miles wide and 150 miles long, along the main divide of the Sierra, has been drawn almost entirely from original work by members of the Club. The region is the most elevated part of the main crest, and has never before been mapped with even a small degree of accuracy. Many additions and corrections, moreover, have been made throughout the entire area. It is hoped that the map may be published this coming spring.

Later in the season the ascent of Mt. Brewer was made by Professor Bolton C. Brown and Mr. A. B. Clark, from a camp at the large lake on the south fork of Bubb's Creek. Keeping along the base of the cliffs of the left-hand spur, they reached the head of the gorge and the eastern slope of the peak, up which they climbed to within two or three hundred feet of the top. Turning then to the left, they gained the ridge between the eastern and western faces of the mountain, and followed it up to the summit. The ascent occupied about five hours.

Mr. Warren Gregory's article on the Kern and King's River Divide in the *SIERRA CLUB BULLETIN*, No. 6, left, as will be remembered, a doubt as to whether the peak which his party climbed was really Tyndall or not. A subsequent canvass of all the data accessible resulted in the conclusion that the party had failed to reach Tyndall. Unwilling to abandon thus their first intention, and wishing to make fresh exploration, Mr. Gregory

and Dr. Emmet Rixford retraced this summer their former route from King's River Cañon up Bubb's Creek, and over the Kern Divide, placing this time a Sierra Club register on the summit of the real Mt. Tyndall. The peak climbed by them the previous season turns out to be the culminating point of the divide east of Brewer, apparently unnamed as yet, but a mountain as fine as Tyndall itself, if not finer — so thought the party after trying both.

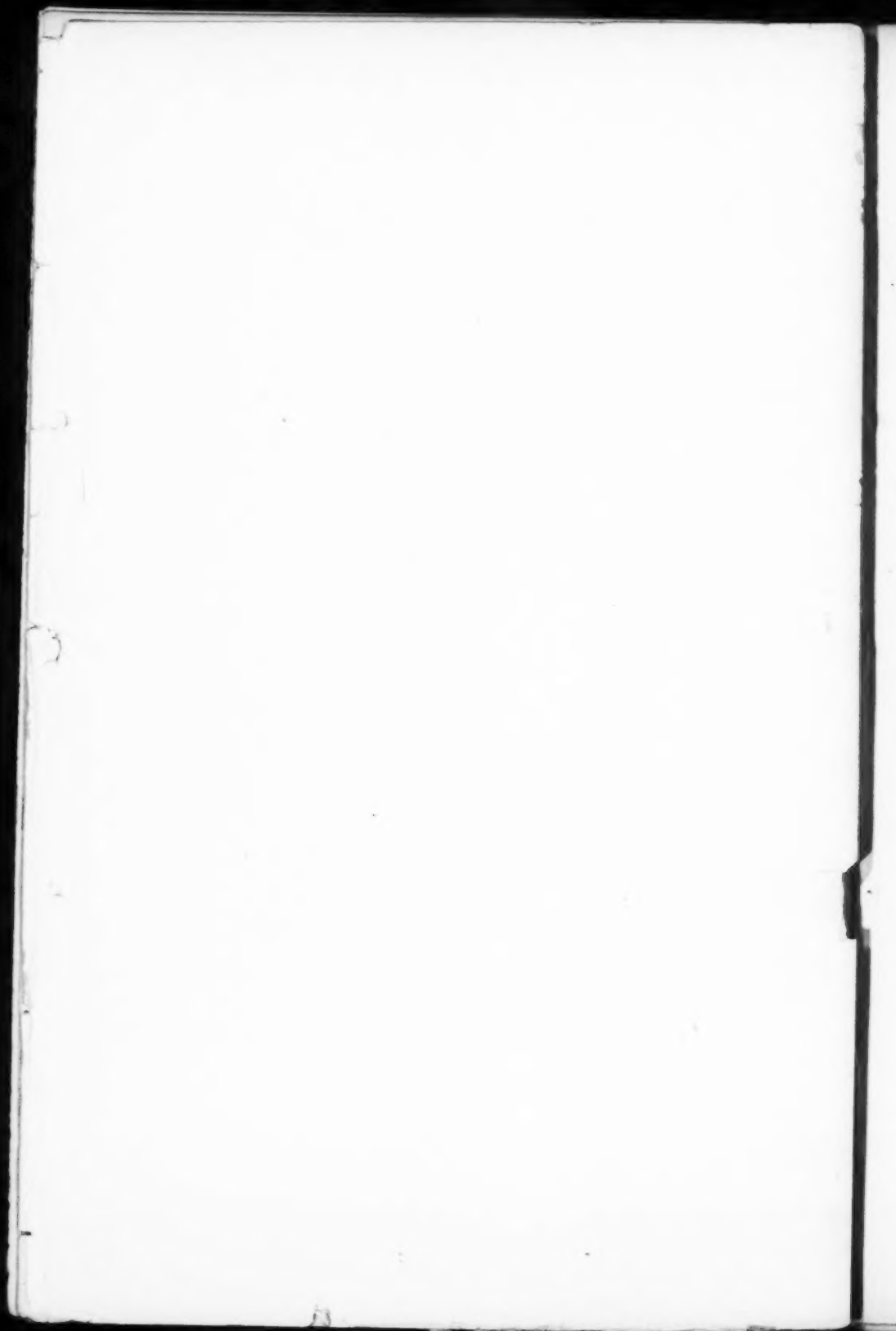
An increasing interest is felt in the new route from King's River Cañon to Mt. Whitney. Those who have compared Mr. Gregory's route of July, 1894, with Mr. Longley's of a few weeks later, must have been convinced that both had found the same pass at the head of Bubb's Creek. The trip of this summer has brought out the further fact that the pass has long been known and used by sheep-herders under the name of Harrison's Pass. It is undoubtedly somewhat dangerous for the passage of animals; but the rough boulder floor of the amphitheatre shown in Mr. Longley's photograph (Plate XXVI), the steep slope up the talus, and the ice and snow which lie on the crest till late in the summer, are really the only serious obstacles encountered. To overcome these requires simply perseverance and intelligent care, but, be it said, a good deal of both. The *constant* obstacles of the amphitheatre and of the rocky talus might doubtless be obviated by the construction of a permanent trail, leaving only the variable icy bank near the summit of the pass to be dealt with by travelers each separate season. This, then, would be the ideal route by which to reach the Whitney group. Six famous peaks — Mt. Brewer, the unnamed peak just east of the pass, Mts. Tyndall, Barnard, and Williamson, with Whitney itself as a fitting climax — could all be reached and climbed within as many days.

Attention should be called here to an error in BULLETIN No. 6, page 193, with regard to one of Mr. Longley's views taken near Harrison's Pass. The first foot-note should read: "See Plate XXV, a view looking *north-west*," instead of "*north-east*."

The ascent of Mt. Whitney, from the Owen's Valley side, has indeed been made before now, and probably has been made more than once. But the honor of being the first to reach the summit from that side with a party of ladies, and the first to give the public an account of his trip, belongs to Mr. A. W. de la Cour Carroll, of Lone Pine, already well known to the readers of the SIERRA CLUB BULLETIN. The party consisted of three ladies — Mrs. J. J. Stewart, Miss F. Shannon, and Miss L. Dodge, — and five gentlemen — Messrs. A. W. Carroll, S. W. Austin, H. Hamilton, P. Lebarge, and Herbert Jones, — all from the neighborhood of Lone Pine.



CONSULTATION LAKE—FROM THE RIDGE SOUTH OF MT. WHITNEY.
From a photograph by A. W. de la Cour Carroll, 1895.



The rendezvous was at the "Meadows," a lovely camping-ground some five miles above the mouth of Lone Pine Cañon, and about two miles from the eastern base of Mt. Whitney. On either side the cañon walls rise to a height of some 4000 or 5000 feet, while on the west the meadow is bounded by a ridge or terrace perhaps 1000 feet high. Over this western terrace two streams come tumbling in cascades, and, their waters uniting at the lower end of the meadow, form Lone Pine Creek. From this point down the cañon is reported to be as lovely as any water-way on that side of the Sierra, and should be more widely known.

The party left camp, on foot, at 6:30 A. M., on August 28, 1895. Carrying with them but a single day's supply of food, they climbed the terrace to the west, by way of the southern waterfall, and continued along the course of the stream that supplies it, until they reached a large flat near the base of the serrated crest known as "The Needles," a crest about a mile in length, stretching southward from Mt. Whitney. Near at hand was a fine sheet of water, which was named "Consultation Lake," and which may be considered as the head of Lone Pine Creek. From the meadows to this point took upwards of two hours' steady tramp.

Taking now a southward course, they crossed the main divide at the saddle between Whitney and the next peak to the south of it, some three-quarters of a mile beyond the southernmost needle; it was then 10:30 A. M. Descending due south to a valley which commences at the western base of the peak just mentioned, they circled round to the west and north, following the course of the valley all the way until they finally reached the large lake west of Whitney, shown in Plate XIV of the *SIERRA CLUB BULLETIN*, No. 3. It was then 5 o'clock, and they were obliged to stop there for the night, and would have fared very badly but for the kindness of a party which arrived an hour later.

The ascent of the mountain was made the next morning. Mr. Carroll recommends for the climb a course directly up the west slope of the mountain, and about half a mile north of the one usually taken from Longley's Camp. This is on firm rock all the way, and by no means so fatiguing as the loose sand; but the latter is the best for the descent.

The interest of the trip, however, centers in the discovery of a nearer pass and a shorter route for the return, making it possible to traverse the whole distance between the summit of Mt. Whitney and the town of Lone Pine in a single day. On the homeward tramp, Mr. Carroll tried in succession all the gorges which form the indents between "The Needles," and was fortunate enough to find from the head of the very last one — the one just south of the southernmost needle — an easy descent,

by which Consultation Lake was reached in an hour's time. "To reach this place of descent," he writes, "do not attempt the apparently easy course along the ridge parallel to 'The Needles,' which is really most difficult and dangerous, but take the usual trail from the summit of Whitney to its base. Then continue southward along the base until you reach the gorge which leads up to the pass just described." From the top of Mt. Whitney this pass can be made in one and a half hours. Four hours more should bring one to the meadows, whence it is four hours' travel to Lone Pine.



VIEW WESTWARD FROM THE TRAIL UP MT. WHITNEY.

From a photograph by A. W. de la Cour Carroll, 1896.



